

Claims

1. A method for the improvement of neuronal regeneration by prevention or specific inhibition of basal membrane formation induced by a lesion of neuronal tissue.
2. The method according to claim 1, wherein the formation of the basal membrane is prevented or inhibited by applying an inhibitor substance of the synthesis of basal membrane building elements, or the assembly of basal membrane building elements, or both the synthesis of basal membrane building elements and the assembly of basal membrane building elements to a body in need thereof.
3. The method of claim 2, wherein the basal membrane building elements are selected from the group consisting of collagen IV, laminin, entactin, accessory substances for proper function, or the assembly of the basal membrane, or both the proper function and the assembly of the basal membrane.
4. ^{claim 2} The method of ~~claims 2 and/or 3~~, wherein the inhibitor substance is selected from the group consisting of antibodies against collagen IV, laminin, entactin, accessory substances for proper function, or the assembly of the basal membrane; Fe-chelating agents; inhibitors of amino acids hydroxylases, such as prolyl-4-hydroxylase, lysine-hydroxylase; 2-oxoglutarate competitors; antisense oligo nucleotides or oligo nucleotide analogs.
5. The method of claim 4, wherein the inhibitor substance is selected from the group consisting of N-oxaloglycine; Zn salts; pyridine derivatives, such as 5-arylcarbonylamino- or 5-arylcarbamoyl-derivatives, 2-carboxylate, 2,5 dicar-

boxylate, their ethyl esters or ethyl amides or -5-acyl sulfonamides, 2,4-dicarboxylate, their ethyl esters or ethylamides, or dimethoxyethylamides; 3,4'-bipyridine, such as 5-amino-6-(1H)-one, 1,6-dihydro-2-methyl-6-oxo-5-carbonitril; 2,2'-bipyridine, such as 5,5'-dicarboxylic acid or its pharmaceutically acceptable salts, 4,4'-dicarboxylic acid ethyl ester or ethyl amide; 3,4'-dihydroxybenzoate, such as the diethyl ester; proline and its structural and functional analogs; β -aminopropionitrile; desferrioxamine; anthracyclines; 2,7,8-trihydroxy anthraquinones, fibrostatin-C; coumalic acid or its pharmaceutically acceptable salts; 5-oxaproline, β -lactam antibiotics.

- a 6. The method according to ^{claim 1} ~~any one of the preceding claims~~, wherein the inhibitor substance(s) are applied in combination with a substance being capable of stimulating neuronal growth or inducing the expression of growth promoting proteins such as fibroblast growth factors, neural cell adhesion molecules like L1 (NILE), growth-associated proteins like GAP43 and anti-apoptotic proteins like bcl-2.
- a 7. The method according to ^{claim 1} ~~any one of the preceding claims~~, wherein the inhibitor substances are applied locally in the neuronal tissue, intraventricularly, or systemically.
- a 8. The method according to ^{claim 1} ~~any one of the preceding claims~~, wherein the inhibitor substance is applied orally or intravenously.
- a 9. The method according to ^{claim 1} ~~any one of the preceding claims~~, wherein the inhibitor substance is applied in therapeutically effective amounts, such as 1 ng/kg to 1 mg/kg body weight.

10. Use of an inhibitor substance which is capable of prevention or specific inhibition of basal membrane formation induced by a lesion of neuronal tissue for the manufacturing of a medicament for the improvement of neuronal regeneration except an inhibitor substance which is an isolated peptide derived from type IV collagen, a peptide inhibiting the laminin nidogen interaction.
11. Use of claim 10 wherein the inhibitor substance is a substance inhibiting the synthesis of basal membrane building elements, or the assembly of basal membrane building elements, or both the synthesis of basal membrane building elements and the assembly of basal membrane building elements.
12. Use of claim 11 wherein the basal membrane building elements are selected from the group consisting of collagen IV, laminin, entactin, accessory substances for proper function, or the assembly of the basal membrane, or both the proper function and the assembly of the basal membrane.
- a 13. Use of ^{claim 10}~~claims 10 or 11~~ wherein the inhibitor substance is selected from the group consisting of antibodies against collagen IV, laminin, entactin, accessory substances for proper function, or the assembly of the basal membrane; Fe-chelating agents; inhibitors of amino acids hydroxylases, such as prolyl-4-hydroxylase, lysine-hydroxylase; 2-oxoglutarate competitors; antisense oligo nucleotides or oligo nucleotide analogs.
14. Use of claim 13 wherein wherein the inhibitor substance is selected from the group consisting of N-oxaloglycine; Zn salts; pyridine derivatives, such as 5-arylcarbonylamino- or 5-arylcarbonyl-derivatives, 2-carboxylate, 2,5 dicarboxylate, their ethyl esters or ethyl amides or -5-acyl sulfonamides, 2,4 dicarboxylate, their ethyl esters or ethylamides, or dimethoxyethylamides; 3,4'-bipyridine, such as 5 amino-6-(1H)-one, 1,6-dihydro-2-methyl-6-oxo-5-carbo-

nitril; 2,2'-bipyridine, such as 5,5'-dicarboxylic acid or its pharmaceutically acceptable salts, 4,4'-dicarboxylic acid ethyl ester or ethyl amide; 3,4'-dihydroxybenzoate, such as the diethyl ester; proline and its structural and functional analoges; β -aminopropionitrile; desferrioxamine; anthracyclines; 2,7,8-trihydroxy anthraquinones, fibrostatin-C; coumalic acid or its pharmaceutically acceptable salts; 5-oxaproline, β -lactam antibiotics.

15. A medicament for the improvement of neuronal regeneration comprising a therapeutically effective amount of an inhibitor substance which is capable of prevention or specific inhibition of basal membrane formation induced by a lesion of neuronal tissue comprising the inhibitor substance(s) in combination with a substance being capable of stimulating neuronal growth or inducing the expression of growth promoting proteins such as fibroblast growth factors, neural cell adhesion molecules like L1 (NILE), growth-associated proteins like GAP43 and anti-apoptotic proteins like bcl-2.
16. The medicament according to claim 15, wherein the inhibitor substance is applied in therapeutically effective amounts, such as 1 ng/kg to 1 mg/kg body weight.
17. Use of a medicament according to claim 15 or 16 for oral or intravenously application or for locally in the neuronal tissue, intraventricularly, or systemically.

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